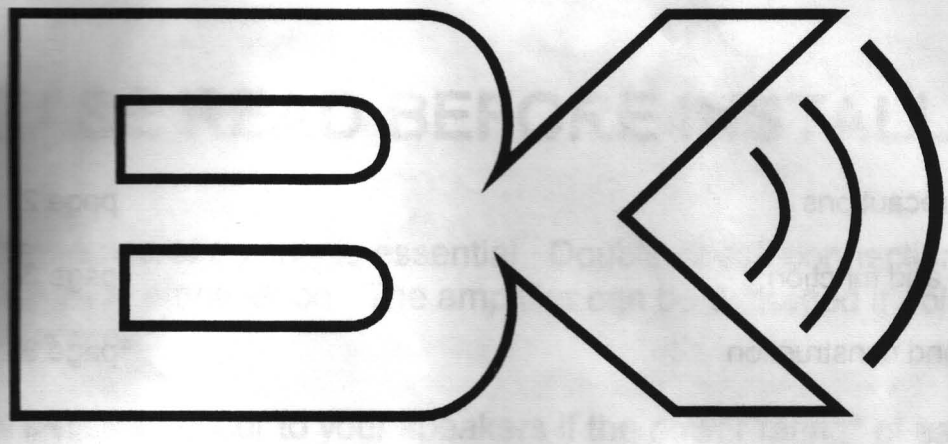

EX4420

Two Channel Amplifier

OWNER'S MANUAL

B & K Components Ltd.

P/N 10908

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Accessories included:

Manual
Power cord

SAFETY PRECAUTIONS

PLEASE READ BEFORE INSTALLING

- Observance of polarity is essential. Double-check connections before turning the amplifier on. The amplifier can be damaged if polarities are incorrect.
- Damage can occur to your speakers if the power rating* of each individual driver is exceeded by the amplifier. Ensure that all the drivers in your speaker system are capable of handling not only the power being delivered by the amplifier, but the energy that is likely to be generated during strong passages.
- Turn amplifier 'off' when plugging in or unplugging input and speaker cables!!!
- When plugging in or unplugging interconnect cables running from source to preamplifier, always mute the preamplifier and rotate the preamplifiers volume control to minimum first. It is recommended that you turn the amplifier 'off' as well for this operation.
- The EX4420 is equipped with raised feet so that continuous ventilation can be maintained. They help to maintain acoustic feedback into the amplifier at a minimum. They also provide a measure of protection against scratching any surface the unit might be resting on. **Do not alter or remove them**.
- Do not stack anything on top of the amplifier (preamplifier, processor, source...etc.).
- Leave at least 2-3 inches clearance from the top of the amplifier to the next shelf, component, etc., to ensure proper ventilation.

* If you are at all unsure of what the speaker 'ratings' are, contact your dealer.

The EX4420's purpose and function

The EX4420 is a compact, very efficient, two channel power amplifier. It is designed to be used in all types of audio or audio/video systems.

Design and construction

The EX4420 utilizes high quality electronic circuitry to achieve an environment wherein a detailed, transparent, and highly musical sound can be realized. The high quality parts complement include state-of-the-art solid state devices, 1% metal film resistors, computer grade electrolytic power supply capacitors, and a high capacity toroidal transformer.

The EX4420 operates class A predriver and AB high current MOSFET power output stages. It is capable of reproducing the most demanding audio signals at rated power levels.

Features

Toroidal Transformers - Efficient high current transformer for improved dynamics.

Discrete Circuitry - More accurate and three dimensional reproduction of source material.

Class A Predriver - Improves low level detail for smoother, more musical sound.

AB MOSFET Output Stage - For efficient and linear power delivery.

Limited Protection - Provides short term protection from accidental shorting of output devices and protection from thermal overload.

Gold Plated Connectors - Improve connections for better sound and minimized signal loss and degradation.

1% Metal Film Resistors - Low noise resistors for better sound and a greater degree of repeatability.

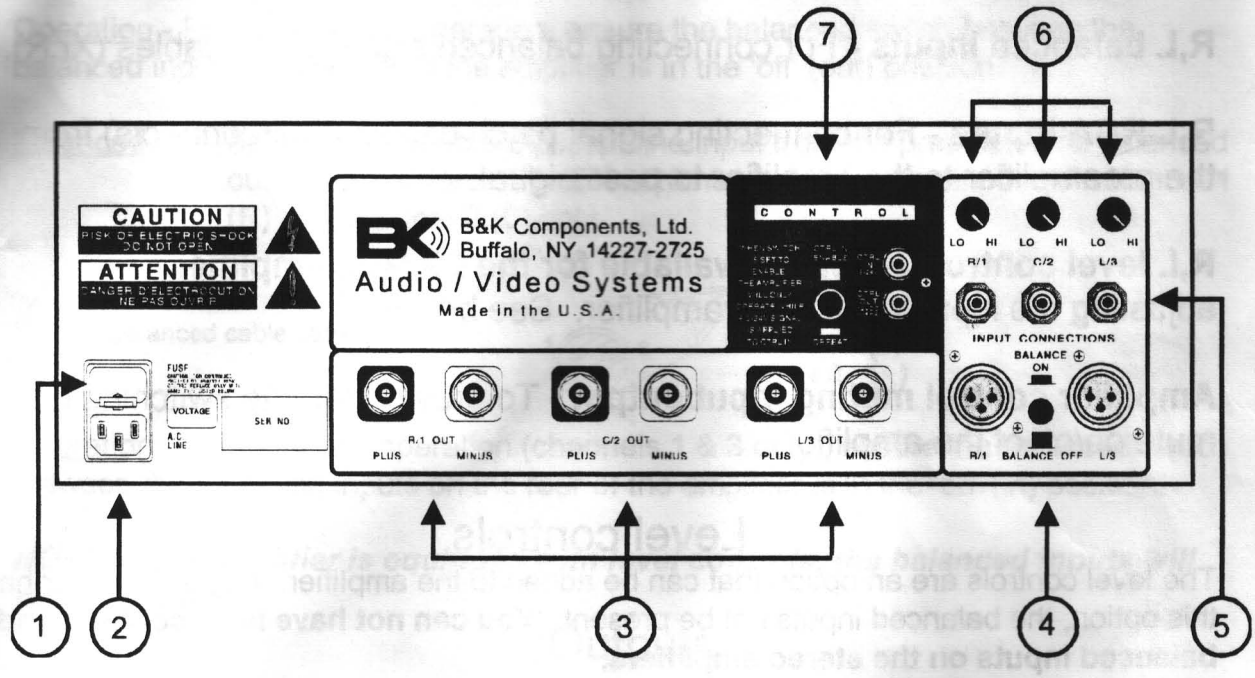
High Current - Ability to reproduce demanding recordings.

Computer Grade Capacitors - Large capacity computer grade electrolytic capacitors for extended low frequency control and improved dynamics.

EX4420

Two Channel Amplifier

REAR PANEL VIEW



1. AC fuse holder
2. AC Input receptacle
3. R,C,L channel speaker outputs
4. R,L balanced inputs
5. R,C,L RCA inputs
6. R,C,L level controls **
7. Amplifier control muting input/output

**** NOTE: OPTIONS AVAILABLE FOR THE EX4420 AMPLIFIER**

NOTE: THE CENTER CHANNEL IS NOT AVAILABLE ON THE EX4420 AMPLIFIER

Back panel description

AC fuse holder - Holds the AC Line fuse. This fuse is a 12 Amp Slow Blow fuse.

AC Input receptacle - For attaching the supplied AC power cord to the amplifier.

R,L channel speaker outputs - For connecting the speakers to the amplifier.

R,L balanced inputs - For connecting balanced signal patch cables (XLR).

R,L RCA inputs - For connecting signal patch cables (interconnects) from the preamplifier to the amplifier to pass signal.

R,L level controls - Option available for the EX4420 amplifier. For adjusting the input level to the amplifier. See below.

Amplifier control muting input/output - To provide remote switching of mute on/off of the amplifier.

Level controls

The level controls are an option that can be added to the amplifier. If your amplifier has this option, the balanced inputs not be present. **You can not have level controls and balanced inputs on the stereo amplifiers.**

There are two level controls on the back of the amplifier. One level control for each channel (R,L).

When using the level controls, first start with them turned all the way up (clockwise). Then adjust them according to your system requirements to match the sound level coming from each speaker.

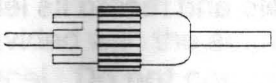
Level controls

Inputs

The EX4420 has two types of line input, unbalanced RCA's and balanced XLR connectors

Unbalanced - RCA type connectors accept line input from the preamplifier's unbalanced output connectors. There are three input connectors, one for each channel, that may be used to connect the amplifier to the preamplifier. They are labeled R,C,L.

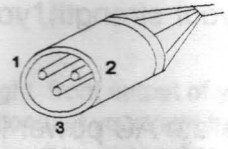
RCA cable connector -



Operation - For unbalanced operation, ensure the balanced switch between the balanced inputs on the rear of the amplifier is in the 'off' (out) position.

Balanced - XLR type connectors accept line input from the preamplifier's balanced output connectors. The EX4420 has balanced line inputs for channel 1 (R) and channel 3 (L) only.

Balanced cable connector -



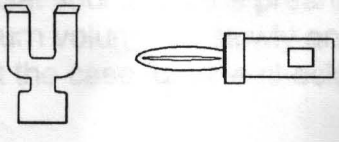
PIN 1 - GND
PIN 2 - (-)
PIN 3 - (+)

Operation - For balanced operation (channels 1 & 3 only), ensure the balanced switch between the balanced inputs on the rear of the amplifier is in the 'on' (in) position.

NOTE: If the amplifier is equipped with level controls, the balanced inputs will not be present.

Outputs

Five way binding posts are provided. One pair for each channel. They are designed to accept a banana-type plug or spade lug connector (shown below) and are color coded for easy identification. The red (+) post should always be connected to the speakers (+) jack. The black (-) post should always be connected to the speakers (-) jack.



Spade connector Banana jack

System installation

There will most likely be a number of cables involved in the installation of your home entertainment system. Pre-planning is essential in order to maximize system efficiency. We recommend the following as a means of helping you reach that goal:

- Make a diagram of your proposed system by laying out the relative location of each component in the system. Then lay out the proposed cable runs between them. Number each cable and record its length on the diagram for future reference.

- Cable runs are critical in that they must be kept away from sources of power radiation (amplifiers, power cords, heaters, etc...). For the sake of safety, they should also be kept out of traffic areas.

- The process of optimizing the system will include the type of cable, the length of the run, and the obstructions it must deal with along its run. Your dealer can advise you on the products available and their relative merits. If building custom length audio cables is not your strength, your dealer should be able to help you with that as well.

- When possible, use a separate AC power line for the amplifier, one that is not shared by any other component in the system of any other house hold component.

Tip: Take a piece of stout string (longer than the longest cable run) and mark it at each foot of length. Then do a mock cable run using the string, dressing it neatly along the way. Count the divisions to the next full foot, and add one foot to allow for some movement of the components. This will provide you with the ideal cable length.

Making the connection

- Before doing anything, ensure that the power switch on the amplifier's front panel is in the 'off' position (rocker side in towards center of amplifier). Again, it is recommended that you locate a separate AC power outlet for the amplifier, one that is **not** shared by any other audio component in the system or any other house hold component. This will eliminate the possibility of the amplifier 'modulating' the power being supplied to the component and compromising the signal originating from that component.

- Locate the AC power cord provided with the amplifier and plug it into the power input receptacle in the rear panel. **Do not connect it to the AC power source yet!**

- Connect the audio cables from your preamplifier's output to the corresponding input connector on the amplifier. (Refer to Diagram 1)

- Connect the wires from your speakers to the appropriate (R,L,C) output on the amplifier. It is absolutely essential that you observe correct polarity in these connections. (Refer to Diagram 1)

  Example: If you connect your right front output of your preamplifier to channel 1 input on the amplifier, remember to connect your right front speaker wires to channel 1's outputs. Always observe polarity when connecting speakers, connect amplifiers (+) to the speakers (+) and amplifiers (-) to speakers (-).

- Double check all connections.

- Plug the amplifier's power cord into the AC power source. Turn the amplifier's power switch 'on'. The panel light should be illuminated. Leave the preamplifier turned off. Before proceeding to the next step turn the amplifier off and wait 30 seconds for the amplifier to discharge. Both the preamplifier and amplifier should be off.

- Connect a playback unit (CD, VLD, Tuner, etc...) to the preamplifier. Turn the volume on the preamplifier to minimum. Turn on the preamplifier, then the amplifier (in that order). Set source on the preamplifier to the playback unit you've just connected. Turn volume up slowly and music should be heard from all channels. If this is not the case, double check your installation.

- Should you encounter any problems that cannot be traced to the source or the material being played, consult the "TROUBLESHOOTING" section on page 13.

*Note: When turning equipment 'off', the amplifier should always be turned off **first**, then the preamplifier. When turning equipment 'on', the preamplifier should always be turned on **first**, then the amplifier. Before turning anything on, ensure the preamplifier is at a low volume level.*

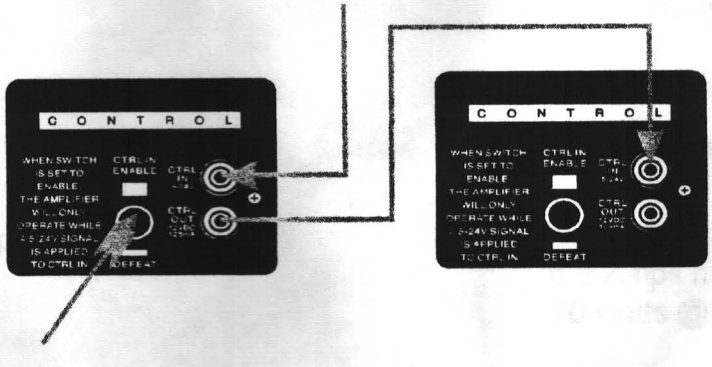
Diagram 1

Control muting

A control is provided on each EX4420 amplifier to allow remote switching of mute on/off. The preamplifier's control output, such as is provided with B&K AVP series preamplifiers, can be utilized to provide a control signal to the EX4420. If more than one amplifier is being controlled, the control signal can be extended to include each successive unit by simply running an RCA type audio cable from the CTRL OUT connector of the first amplifier to the CTRL IN connector of the next unit (commonly referred to as 'daisy chaining'). An example of how to connect two amplifiers is illustrated below.

If a source other than a B&K AVP series preamplifier is used to control multiple amplifiers, only the control output voltage from the source is critical. It must be within the range, as indicated on the rear panel, 5-24 volts DC is required. The amplifier will provide each successive amplifier with a control voltage of 12 volts DC for reliable operation. The amplifiers control output may be used as a source of 12 VDC @ 125 mA for other user applications as well.

Range of 5-24 VDC from source

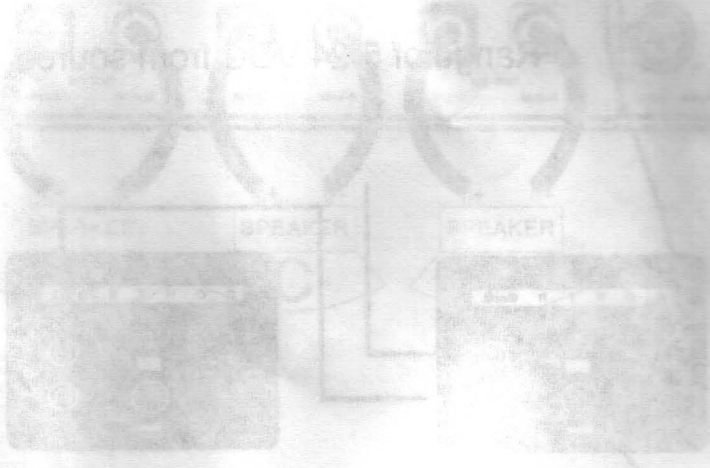


Control enable button

If the control function is desired, each unit in the system must remain connected at all times and the control must be enabled. To enable the control function, the CTRL ENABLE button must be out for each controllable amplifier in the system. For more information on the amplifiers output status under various control conditions, refer to the table below.

** Note: The control voltage is for muting control only. Each amplifier must be connected to its own source of AC power in order for it to operate.*

@ CTRL IN	Button position	Output status	@ CTRL OUT
Signal	OUT	Sound	Signal
Signal	IN	Sound	Signal
No Signal	OUT	Mute	No Signal
No Signal	IN	Sound	Signal



EX4420 SPECIFICATIONS

Power rating: 8 ohms	200 watts @ 1KHz
4 ohms	350 watts @ 1KHz
Frequency response	1 Hz - 45 KHz
Input sensitivity	1.65 Volts
THD (S+N)	0.09 % @ 1 KHz
Input impedance	33.2 Kohms
Damping factor	450
Current (peak to peak)	75 Amps
Slew rate	14V/μsec
Dynamic headroom	1.2 dB
S/N (A-weighted)	95 dB
Voltage gain	28
Line voltage	120/220/240 VAC switchable
Dimensions (O.A.)	17"(w) X 15.5"(d) X 5.75"(h)
Weight	36 lb (16.3 Kg)
Power consumption	650 watts max 6.9 Amps max current draw 70 watts @ no input
Replacement fuses	Line - 12 A Slow Blow Rails - 6 A Slow Blow

Troubleshooting

PROBLEM	POSSIBLE CAUSE	POSSIBLE SOLUTION
No sound ('on' LED not illuminated)	1. Power cord not plugged in. 2. Power off at AC source. 3. AC power inlet fuse blown or faulty. 4. Control switch in the wrong position.	1. Reconnect power cord. 2. Check AC switch or fuse. 3. Check for shorts or overloading. 4. Place control switch in proper postion (page 10).
No sound on some or all selected channels ('on' LED illuminated)	1. Speaker leads loose or faulty. 2. Line stage to amp. cables loose. or faulty. 3. Source to line stage cables loose or faulty. 4. Line stage or source not correctly selected.	1. Tighten, repair, or replace cable 2. Tighten, repair or replace cable 3. Tighten, repair or replace cable 4. Check all switch settings.
Sound lacks direction, bass weak	1. Speakers connected out of phase.	1. Check connections making sure that cables are connected (+) to (+) and (-) to (-).
Loud hum or buzz on one or more channels	1. Poor ground connection in interconnect cables.	1. Check all connectors and repair as necessary.
Low output from amplifier	1. Balanced switch in balanced mode when using unbalanced inputs.	1. Put balanced switch in correct position.
Channel sounds distorted and low in output	1. Blown rail fuse.	1. Replace blown rail fuse inside amplifier.

** ***Note***: If unit continues to blow power inlet fuses, **DO NOT USE A HEAVIER FUSE!!**, have it serviced.